

IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (currently amended) A data management system for storages, suitable for a system having a plurality of hosts and ~~a host and a plurality of storages~~ connected to a data transfer network, comprising:

a converter facility, included in each said host, for converting a unit of data specific to an operating system (OS) on said host into a unit of data common to said storages; and

a management facility, connected to said hosts and said storages by way of said data transfer networks, for receiving a name of a unit of data common to said storages from said host hosts and managing a readout of said unit of data common to said storages in response to said unit name received from said host from one of said storages, and managing access information used when said hosts sends a read request or a write request to said storage.

wherein each of said storages includes a storage device and a virtual space defined therein for storing data and a controller for controlling data transfer sent from said host through said data transfer network so as to assign said data to a the virtual space according to an instruction from said management facility and store said data assigned to the virtual space in said storage device, and for processing the read request or the write request from said hosts by using said data stored in the virtual space.

2. (original) A system according to claim 1, wherein said unit of data specific to said operating system has an actual data section and a first control section for defining the type of data specific to said operation system, and

wherein said converter facility considers the entire unit as said actual data to add to said unit of data specific to said operating system a second control section created for managing the type of data and for being common to said storages.

3. (original) A system according to claim 2, wherein said data transfer network is a storage area network.

4. (currently amended) A system having a plurality of hosts ~~host~~ and a plurality of storages connected to a data transfer network, comprising:

a converter facility, included in each said host ~~said host~~, for converting files in a first format having a file format specific to an operating system on said host into files in a second format having a file format common to said storages; and

a management facility, connected to said hosts and said storages by way of said data transfer network, for receiving a file name of a file in said first format from said host unit and ~~managing a readout of files in said second format in response to said file name in said first format from one of said storages, and managing access information used when said hosts sends a read request or a write request to said storages.~~

wherein each of said storages includes a storage device and a virtual space defined therein for storing data and a controller for controlling data transfer sent from said host through said data transfer network so as to assign said data to a the virtual space according to an instruction from said management facility and store said data assigned to the virtual space in said storage device, and for processing the read request or the write request from said hosts by using said data stored in the virtual space.

5. (original) A system according to claim 4, wherein said files in said first format is comprised of actual data section and a first control section for defining the type of data specific to said operating system, and

wherein said converter facility considers said entire files in said first format as said actual data to add to said files in said first format a second control section created for managing the type of data and for being common to said storages.

6. (currently amended) A system having a plurality of storages and hosts connected to a data transfer network, comprising:

a host for obtaining files from said storages;

a server for managing files present apart from said host; and

a converter facility, included in said host, for converting files of a format specific to an operating system on said host into format files having a format common to said storages,

wherein said server, connected to said data transfer network, receives a file name of a file in said format specific to the operating system on said host and manages transmission of said generic format files in response to an access permission request including said file name of a file in said format specific to the operating system on said host from one of said storages, and

wherein each of said storages includes a storage device and a virtual space defined therein for storing data and a controller for controlling data transfer sent from said host through said data transfer network so as to assign said data to a the virtual space according to an instruction from said management facility and store said data assigned to the virtual space in said storage device, and for processing the read request or the write request from said hosts by using said data stored in the virtual space.

7. (original) A system according to claim 6, further comprising:

a storage for storing said common format files,

wherein said server issues to said storage a staging request with a file operation ID added with respect to a file requested for said access permission, and sends said file operation ID on condition that any error occurs;

wherein said storage stages said file in accordance with said staging request and add said file operation ID to said file, and

wherein said host obtains said file by issuing a file operation request to said storage with said file operation ID added.

8. (original) A system, according to claim 7, wherein said file operation ID is for use in the acknowledgement of access right of said host.

9. (currently amended) A system having a plurality of storages and hosts connected to a data transfer network, comprising:

a host having a file system for converting files in a file format specific to an operating system of said host into files in a file format common to said storages, and converting files in said common file format on said data transfer network into files in said file format specific to said operation system of said host, and said host updating data in said file format specific to said operating system; and

a management facility, connected to said hosts and said storages by way of said data transfer network, for receiving a file name of a file in said format specific to the operating system on said host and ~~managing a readout of a file of said file format common to said storages in response to said file name of said file in said format specific to the operating system of said host from one of said storages, and managing access information used when said hosts sends a read request or a write request to said storages.~~

wherein each storage includes a file storage area for storing files in a format common to said storages, a virtual space for retaining files that may be transmitted and received to and from said host or another storage and that is in said format common to said storages, and a storage controller for asynchronously allocating said file read out from said file storage area to said virtual space to transmit to said host

said file in said virtual space, and for processing the read request or the write request from said hosts by using said file stored in said virtual space.

10. (original) A system according to claim 9, wherein said data transfer network comprises a plurality of fibre switches having hosts and/or storage devices connected thereto and a storage area network for connecting these components.

11. (previously presented) A system according to claim 9, wherein said file in said file format specific to said operating system is comprised of actual data and a file control section for defining the file type thereof, and

wherein said file system considers said actual data plus said file control section as an actual data entirely to create another file control section common to said storages, said file in said file format specific to said operating system being converted to a file in said file format common to said storages by adding said another control section to said file in said file format specific to said operating system.